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### GENERAL

In addition to standard hand tools, Special Service Tools which are either essential or desirable to quickly and efficiently perform maintenance and repair operations, have been designed and made available. Any garage servicing and repairing Kaiser and Frazer model automobiles should have all the essential tools listed in this Section. The desirable tools, or their equivalent, although not necessarily required, will simplify operations and increase shop efficiency.

Essential and desirable tools are listed numerically in this Section, together with the tool name, in groups which are in the same order as Sections of this manual. Figs. 456 and 457 show most of the tools identified by tool number to assist in identifying the tools. In addition, illustrations showing the application of most of the tools listed are provided in the Section of this manual where the operation calling for use of the tool is described.

It is suggested that the tools be mounted on suitable display boards in the shop for convenience and to show customers the adequacy of available service equipment. Stencil Set KF-41, containing necessary hooks, silhouettes and tool number tags for use on display boards, is available and should be ordered the same as special tools.

All of the tools listed herein are available from Miller Manufacturing Company, 5919 Tireman Avenue, Detroit 4, Michigan, and should be ordered direct from them by number and name. Prices and availability of the listed tools will be furnished upon request to the Miller Manufacturing Company.

### ENGINE TUNE-UP

KF-13	* Fuel Pump Pressure Checking Gauge
DD-29	* Tappet Wrench
MTU-36	Tension Scale (Calibrated in Ounces)
W-189	* Cylinder Compression Gauge
C-425	* Vacuum Gauge
C-693	* Ignition Timing Light

### ENGINE REPAIR

KF-4	* Camshaft Bearing Remover and Replacer
KF-5	* Clutch Pilot Bushing Remover
KF-6	* Clutch Pilot Bushing Driver and Burnisher
KF-8	* Main Bearing Upper Shell Remover and Installer
KF-24	† Engine Stand (Requires KF-130 Adapter Kit for stands purchased prior to inclusion of brackets for 1951 engines).
KF-27	* Valve Guide Remover and Installer
KF-28	* Timing Case Oil Seal Installing Sleeve
DD-29	* Tappet Wrench
KF-31	* Vibration Damper Puller
KF-44	* Timing Chain Cover Oil Seal Drift
KF-52	* Valve Tappet Bore Reamer Set (Requires reamers SP-1266 and SP-1267 for 1951 engines)
KF-56	Universal Puller
KF-57	* Valve Guide Bore Reamer (Oversize)
KF-58	* Valve Seat Relief Counterboring Set
KF-61	* Valve Spring Length Gauge
KF-63	* Valve Seat Narrowing Cutter (70° for narrowing from bottom of seat)

† Indicates—Not Illustrated

\* Indicates—K-F Minimum Essential Tools

# KAISER-FRAZER SHOP MANUAL

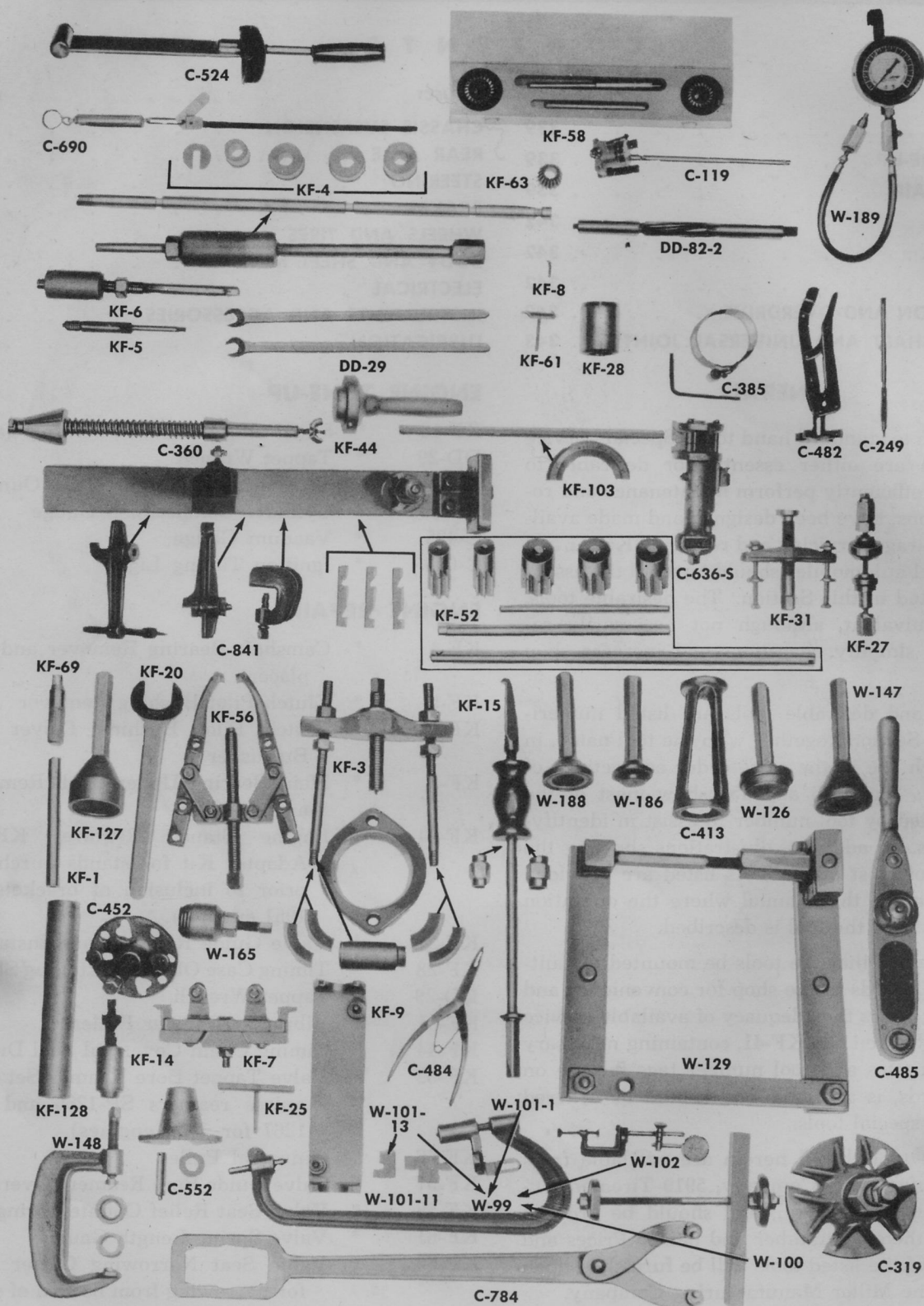


Fig. 456—Special Service Tools

SP-1324

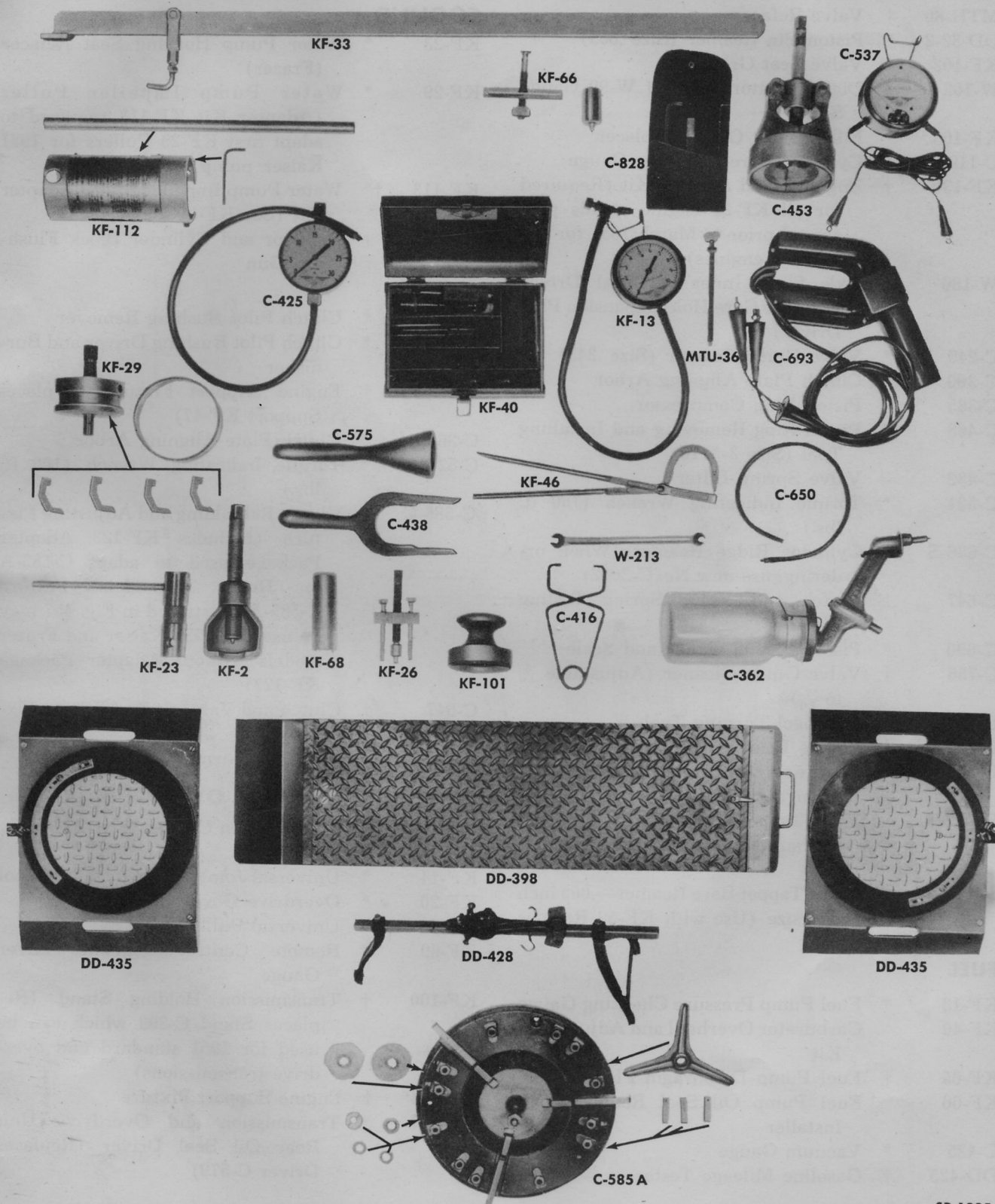


Fig. 457—Special Service Tools

SP-1325



# KAISER-FRAZER SHOP MANUAL

MTH-80	†	Valve Refacer
DD-82-2	*	Piston Pin Reamer (Size .859)
KF-102	†	Valve Seat Grinder
W-102	*	Dial Indicator (Part of W-99 Gauge Set)
KF-103		Filler Block Guard Replacer
C-119	*	Cylinder Bore Checking Gauge
KF-130	†	Engine Stand Adapter Kit (Required for all KF-24 engine stands purchased prior to March 1951 for use on 1951 engines)
W-186	*	Axle Shaft Inner Oil Seal Driver (Used as Core Hole Expansion Plug Driver)
C-249	*	Valve Guide Reamer (Size .343)
C-360	*	Clutch Plate Aligning Arbor
C-385		Piston Ring Compressor
C-468	†*	Piston Ring Removing and Installing Tool (Size 3-5/16)
C-482		Valve Spring Lifter
C-524	*	Torque Indicating Wrench (100 ft. lbs.)
C-636-S		Cylinder Ridge Reamer (When ordering, use new No. C-3012)
C-647	†	Clutch and Valve Spring Testing Fixture
C-690	*	Piston Fitting Gauge and Scale
C-756	†	Valve Guide Cleaner (Adjustable $\frac{5}{16}$ to $\frac{7}{16}$ )
C-771	†	Flywheel Turning Tool
C-776	†	Engine Bearing Wear Detector Tank
C-841	*	Connecting Rod Aligning and Straightening Tool Set
SP-1266		Valve Tappet Bore Reamer—.002 inch oversize (Use with KF-52 Reamer Set)
SP-1267		Valve Tappet Bore Reamer—.005 inch oversize (Use with KF-52 Reamer Set)

## FUEL

KF-13	*	Fuel Pump Pressure Checking Gauge
KF-40		Carburetor Overhaul and Adjustment Kit
KF-65	†	Fuel Pump Diaphragm Flexing Tool
KF-66		Fuel Pump Oil Seal Remover and Installer
C-425	*	Vacuum Gauge
DD-425	†	Gasoline Mileage Tester

## COOLING

KF-23	*	Water Pump Housing Seat Refacer (Frazer)
KF-29	*	Water Pump Impeller Puller (Adapter Kit KF-113 required to adapt first KF-29 Pullers for 1951 Kaiser pump)
KF-113	†*	Water Pump Impeller Puller Adapter Kit (See KF-29 above)
C-311	†	Radiator and Cylinder Block Flushing Gun

## CLUTCH

KF-5	*	Clutch Pilot Bushing Remover
KF-6	*	Clutch Pilot Bushing Driver and Burnisher
KF-104	†	Engine Support Fixture (Replaces Support KF-47)
C-360	*	Clutch Plate Aligning Arbor
C-524	*	Torque Indicating Wrench (100 ft. lbs.)
C-585-C	*	Clutch Rebuilding and Adjusting Fixture (Includes KF-123 Adapter Package used to adapt C-585-A for Henry J models. Fixture C-585-A illustrated in Fig. 457 may be used on 1951 Kaiser and Frazer models without Adapter Package KF-123)
C-647	†	Clutch and Valve Spring Testing Fixture
C-771	†	Flywheel Turning Tool

## TRANSMISSION AND OVERDRIVE

KF-1	*	Transmission Cluster Gear Assembly Arbor
KF-14	*	Universal Joint Flange Installing Tool
KF-20	*	Overdrive Governor Wrench
KF-56		Universal Puller
KF-69	*	Remote Control Gearshift Lever Gauge
KF-100	†	Transmission Holding Stand (Replaces Stand C-399 which can be used for 1951 standard and overdrive transmissions)
KF-104	†	Engine Support Fixture
KF-127	*	Transmission and Overdrive Unit Rear Oil Seal Driver (Replaces Driver C-579)

† Indicates—Not Illustrated

\* Indicates—K-F Minimum Essential Tools

- KF-128 \* Transmission Drive Pinion Bearing Driver (Replaces Driver KF-11)
- W-165 \* Pinion and Transmission Rear Oil Seal Puller
- C-452 \* Universal Joint Flange Puller
- C-484 \* Snap Ring Pliers
- C-485 Torque Indicating Wrench (175 ft. lbs.)
- C-784 \* Universal Joint Flange Holding Wrench

## PROPELLER SHAFTS AND UNIVERSAL JOINTS

- KF-14 \* Universal Joint Flange Installing Tool
- W-148 \* Universal Joint Bearing Removing and Installing Clamp
- C-452 \* Universal Joint Flange Puller
- C-552 \* Universal Joint Pin Remover and Installer
- C-784 \* Universal Joint Flange Holding Wrench

## CHASSIS SUSPENSION

- KF-7 \* Upper Control Arm Assembly Gauge
- KF-9 \* Lower Control Arm Assembly Gauge
- CA-17 † Wheel Alignment Rack (Stationary)
- KF-25 \* Camber Adjusting Wrench
- KF-117 † Spring Jack
- DD-398 \* Wee-Gee Board (Toe-In Checking)
- DD-428 \* Universal Camber, Caster Gauge
- DD-435 \* Front Wheel Turntables, (Pair)

## REAR AXLE

- KF-3 \* Tapered Roller Bearing Puller Set
- KF-14 \* Universal Joint Flange Installing Tool
- KF-15 \* Axle Shaft and Inner Oil Seal Puller
- W-99 \* Pinion and Ring Gear Gauge Set (Includes W-100, W-101-1, W-101-11, W-101-13 and W-102. Early Sets may be adapted for Model 44 Axle by adding W-101-13)
- W-101-13 \* Gauge Block ("E" Setting—Required for use with W-99 Set on Model 44 Axles)
- W-126 \* Pinion Front Bearing Cup Driver
- KF-128 \* Transmission Drive Pinion Bearing Driver (Replaces Driver KF-11)

- W-129 \* Differential Housing Spreader
- W-147 \* Pinion Oil Seal Driver
- W-186 \* Axle Shaft Inner Oil Seal Driver
- W-188 \* Differential Case Bearing Cone Driver
- C-319 \* Rear Wheel Hub Puller
- C-413 \* Axle Shaft and Bearing Driver
- C-452 \* Universal Joint Flange Puller
- C-485 Torque Indicating Wrench (175 ft. lbs.)
- C-784 \* Universal Joint Flange Holding Wrench

## STEERING

- KF-2 \* Steering Gear Pitman Arm Puller
- KF-26 \* Steering Wheel Puller
- KF-68 \* Horn Switch Ring Remover and Installer
- KF-101 \* Horn Button Remover and Installer
- C-690 \* Piston Fitting Gauge and Scale

## BRAKES

- KF-46 \* Brake Shoe Return Spring Pliers
- W-213 \* Brake Adjusting Wrench
- C-319 \* Rear Wheel Hub Puller
- C-362 \* Brake Cylinder Refiller
- C-416 Brake Cylinder Clamps (Set of 4)
- C-485 Torque Indicating Wrench (175 ft. lbs.)
- C-650 Brake Bleeder Hose
- C-837 † Brake-Fil Bleeder Tank

## WHEELS AND TIRES

- C-438 \* Hub and Grease Cap Remover
- C-575 \* Front Wheel Grease Cap Installing Driver
- C-715 † Tire Removing Tool
- C-735 † Wheel Balancer (Weights extra)
- C-833 † Modern Tire Changer

## BODY AND SHEET METAL

- 2-C † Body and Fender Repair Unit
- KF-33 \* Hood Hinge Spring Remover and Replacer—Frazer
- KF-112 \* Hood Spring Rewind Tool—Kaiser
- MT-270 † Luster-Seal Buffer
- C-533 † Door Handle and Window Regulator Escutcheon Plate Removing Tool

† Indicates—Not Illustrated

\* Indicates—K-F Minimum Essential Tools

# KAISER-FRAZER SHOP MANUAL

## ELECTRICAL

KF-20	*	Overdrive Governor Wrench
MTU-36		Tension Scale (Calibrated in ounces)
C-453	*	Generator Pulley Puller
C-537	*	Ignition and Light Voltmeter
C-693	*	Ignition Timing Light
C-744	†	Overdrive Transmission Electrical Control Checking Light

C-770	†	Armature Turning and Undercutting Tool
C-828		Generator Regulator Tool Kit

## INSTRUMENTS AND ACCESSORIES

KF-42	†*	Instrument Panel Bezel Nut Wrench
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## LUBRICATION

C-408	†*	Spring Cover Lubricating Tool
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† Indicates—Not Illustrated

\* Indicates—K-F Minimum Essential Tools

## SERVICE BULLETIN REFERENCE